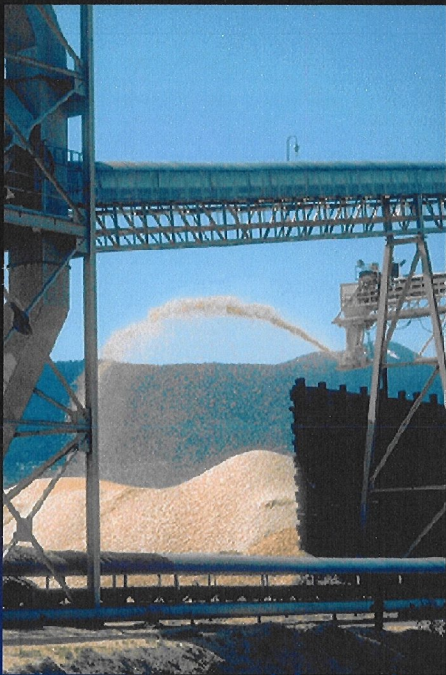
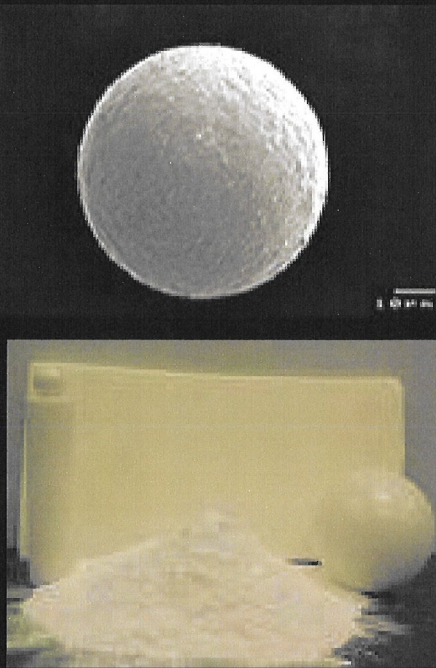


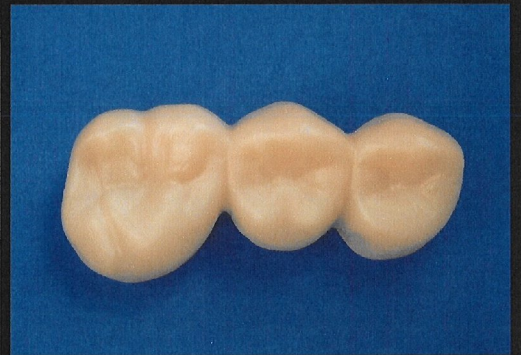
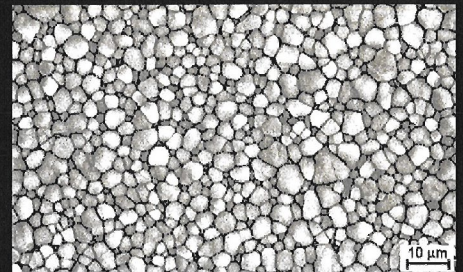
BruxZir: From Beach to Mouth



Zircon Raw Material



Powder Processing



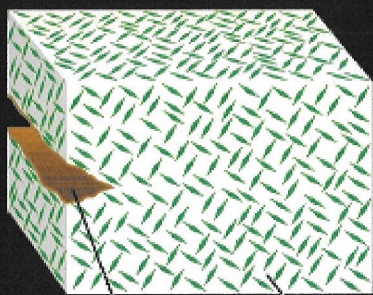
Sintering Final Shape

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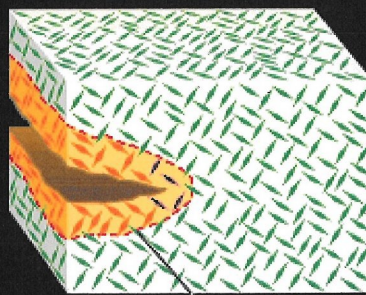
The Greatest Property

crack initiation



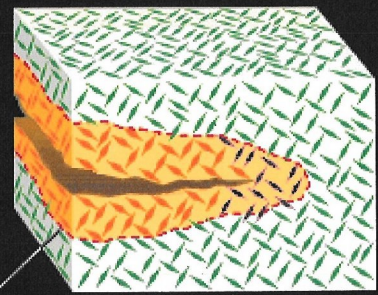
crack zirconia matrix

early stage of crack propagation

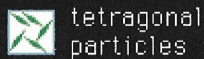


process zone crack-closing stress field

later stage of crack propagation



process zone



tetragonal particles



tetragonal particles transforming into monoclinic particles



already transformed monoclinic particles

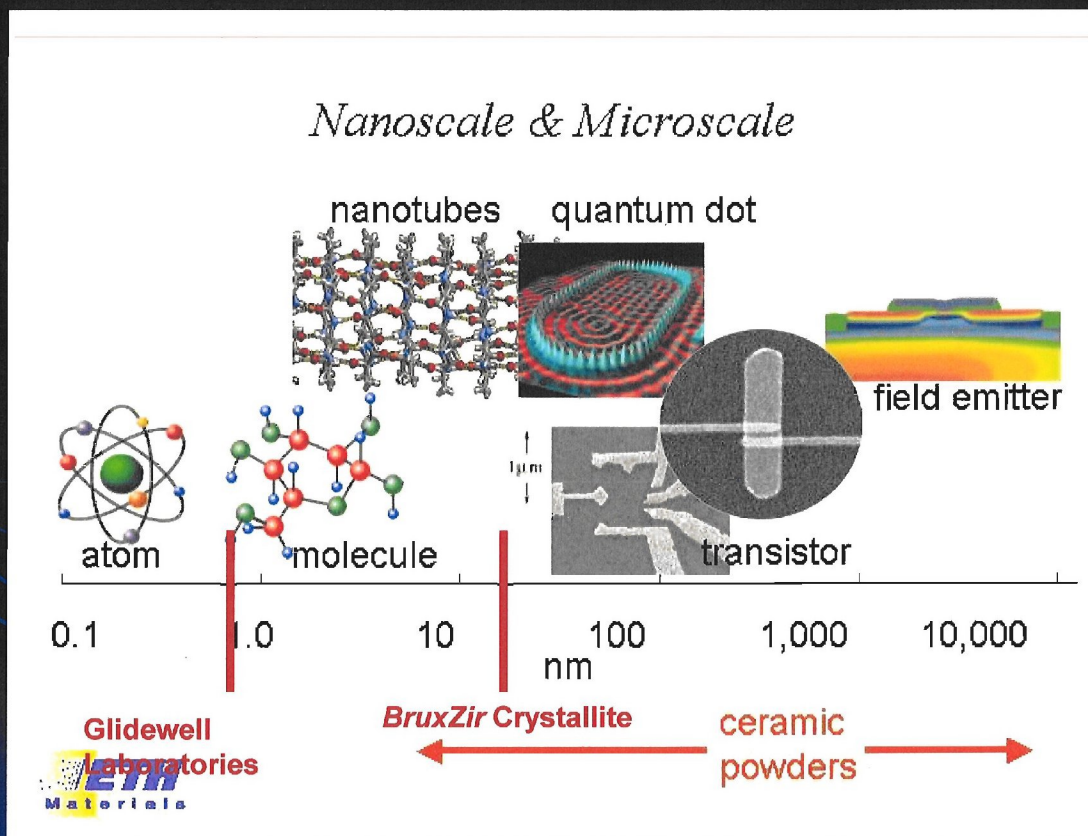
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Stress energies from propagating cracks cause the transition from the metastable tetragonal to the stable monoclinic Zirconia. The energy used by this transformation is sufficient to slow or stop propagation of the cracks



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Nano Technology Scale



10/26/2011

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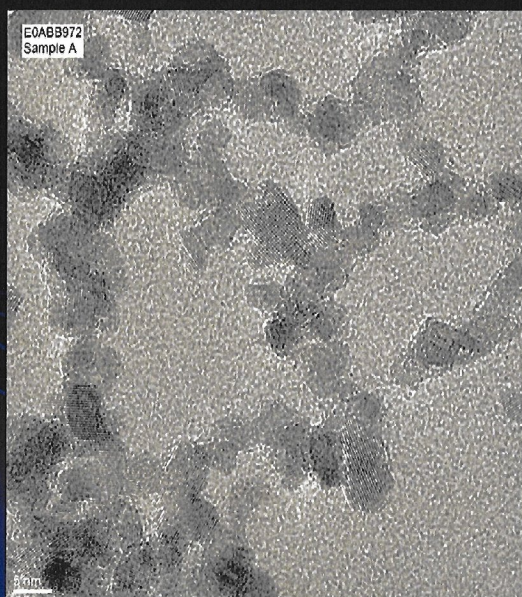
8

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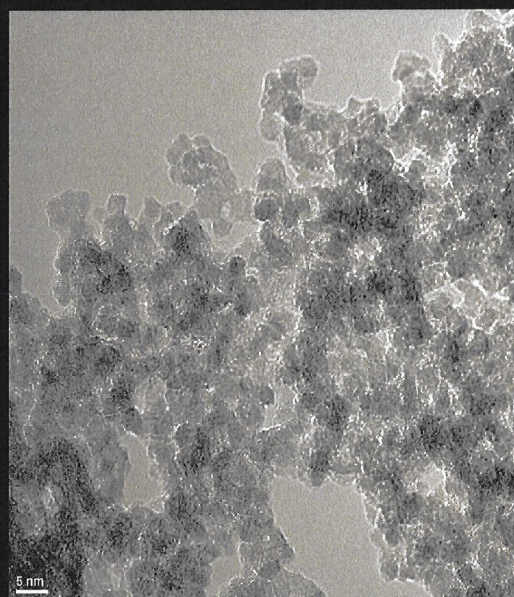
NanoZirconia

GL-nanocrystalline Zirconia

Nano Zirconia strands attached
BEFORE



Nano Particulates after Attrition
AFTER



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